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<140> US 09/634,287

<141> 2000-08-09

<150> 60/053,850

<151> 1997-07-25

<150> 60/055,836

<151> 1997-08-15

<150> 60/062,169

<151> 1997-10-16

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<170> PatentIn version 3.2

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<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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35 40 45

Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro
50 55 60

Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg
65 70 75 80

Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu
85 90 95

Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu
100 105 110

Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu
115 120 125

Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp
130 135 140

Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu
145 150 155 160

His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro
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Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro
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Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg
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Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val
210 215 220

Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg
225 230 235 240

Tyr Leu Leu Thr Val Met Ala Ala Ala Lys Ala Phe Lys His Pro
245 250 255

Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu
260 265 270

Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr
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Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp
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Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp
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Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly
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Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly
340 345 350

Leu Gln Ser Ala Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn
355 360 365

Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu
370 375 380

Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro

385

390

395

400

Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu
405 410 415

Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu
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His Leu Pro Val Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln
435 440 445

Cys Gln Leu Thr Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro
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Pro Pro Cys Ala Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala
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Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly
485 490 495

Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu
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Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro
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Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser
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Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr
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Gly Ser Ala Leu Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His
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Arg Thr Asp Leu Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro
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Arg Tyr Thr Gly Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln
610 615 620

Ala Arg Ala Leu Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp
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Gly Thr Pro Cys Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg
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Cys Ile His Ala Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe
660 665 670

Asp Lys Cys Met Val Cys Gly Gly Asp Gly Ser Gly Cys Ser Lys Gln
675 680 685

Ser Gly Ser Phe Arg Lys Phe Arg Tyr Gly Tyr Asn Asn Val Val Thr
690 695 700

Ile Pro Ala Gly Ala Thr His Ile Leu Val Arg Gln Gln Gly Asn Pro
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Gly His Arg Ser Ile Tyr Leu Ala Leu Lys Leu Pro Asp Gly Ser Tyr
725 730 735

Ala Leu Asn Gly Glu Tyr Thr Leu Met Pro Ser Pro Thr Asp Val Val
740 745 750

Leu Pro Gly Ala Val Ser Leu Arg Tyr Ser Gly Ala Thr Ala Ala Ser
755 760 765

Glu Thr Leu Ser Gly His Gly Pro Leu Ala Gln Pro Leu Thr Leu Gln
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Val Leu Val Ala Gly Asn Pro Gln Asp Thr Arg Leu Arg Tyr Ser Phe
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Phe Val Pro Arg Pro Thr Pro Ser Thr Pro Arg Pro Thr Pro Gln Asp
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Trp Ala Gly Arg Lys
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<212> PRT

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<211> 930

<212> PRT

<213> Homo sapiens.

<400> 15

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20 25 30

Gln Pro Pro Thr Ala Ala Ala Ala Gln Pro Arg Arg Arg Gln Gly
35 40 45

Glu Glu Val Gln Glu Arg Ala Glu Pro Pro Gly His Pro His Pro Leu
50 55 60

Ala Gln Arg Arg Arg Ser Lys Gly Leu Val Gln Asn Ile Asp Gln Leu
65 70 75 80

Tyr Ser Gly Gly Lys Val Gly Tyr Leu Val Tyr Ala Gly Gly Arg
85 90 95

Arg Phe Leu Leu Asp Leu Glu Arg Asp Gly Ser Val Gly Ile Ala Gly
100 105 110

Phe Val Pro Ala Gly Gly Thr Ser Ala Pro Trp Arg His Arg Ser
115 120 125

His Cys Phe Tyr Arg Gly Thr Val Asp Ala Ser Pro Arg Ser Leu Ala
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Val Phe Asp Leu Cys Gly Gly Leu Asp Gly Phe Phe Ala Val Lys His
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Ala Arg Tyr Thr Leu Lys Pro Leu Leu Arg Gly Pro Trp Ala Glu Glu
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Glu Lys Gly Arg Val Tyr Gly Asp Gly Ser Ala Arg Ile Leu His Val

180

185

190

Tyr Thr Arg Glu Gly Phe Ser Phe Glu Ala Leu Pro Pro Arg Ala Ser
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Cys Glu Thr Pro Ala Ser Thr Pro Glu Ala His Glu His Ala Pro Ala
210 215 220

His Ser Asn Pro Ser Gly Arg Ala Ala Leu Ala Ser Gln Leu Leu Asp
225 230 235 240

Gln Ser Ala Leu Ser Pro Ala Gly Gly Ser Gly Pro Gln Thr Trp Trp
245 250 255

Arg Arg Arg Arg Ser Ile Ser Arg Ala Arg Gln Val Glu Leu Leu
260 265 270

Leu Val Ala Asp Ala Ser Met Ala Arg Leu Tyr Gly Arg Gly Leu Gln
275 280 285

His Tyr Leu Leu Thr Leu Ala Ser Ile Ala Asn Arg Leu Tyr Ser His
290 295 300

Ala Ser Ile Glu Asn His Ile Arg Leu Ala Val Val Lys Val Val Val
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Leu Gly Asp Lys Asp Lys Ser Leu Glu Val Ser Lys Asn Ala Ala Thr
325 330 335

Thr Leu Lys Asn Phe Cys Lys Trp Gln His Gln His Asn Gln Leu Gly
340 345 350

Asp Asp His Glu Glu His Tyr Asp Ala Ala Ile Leu Phe Thr Arg Glu
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Asp Leu Cys Gly His His Ser Cys Asp Thr Leu Gly Met Ala Asp Val
370 375 380

Gly Thr Ile Cys Ser Pro Glu Arg Ser Cys Ala Val Ile Glu Asp Asp
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Cys Asn Leu Thr Phe Gly Pro Glu Tyr Ser Val Cys Pro Gly Met Asp
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Val Cys Ala Arg Leu Trp Cys Ala Val Val Arg Gln Gly Gln Met Val
515 520 525

Cys Leu Thr Lys Lys Leu Pro Ala Val Glu Gly Thr Pro Cys Gly Lys
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Gly Arg Ile Cys Leu Gln Gly Lys Cys Val Asp Lys Thr Lys Lys Lys
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565 570 575

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595 600 605

Lys Arg Ala Ile Tyr Arg Ser Cys Ser Leu Met Pro Cys Pro Pro Asn
610 615 620

Gly Lys Ser Phe Arg His Glu Gln Cys Glu Ala Lys Asn Gly Tyr Gln
625 630 635 640

Ser Asp Ala Lys Gly Val Lys Thr Phe Val Glu Trp Val Pro Lys Tyr
645 650 655

Ala Gly Val Leu Pro Ala Asp Val Cys Lys Leu Thr Cys Arg Ala Lys
660 665 670

Gly Thr Gly Tyr Tyr Val Val Phe Ser Pro Lys Val Thr Asp Gly Thr
675 680 685

Glu Cys Arg Pro Tyr Ser Asn Ser Val Cys Val Arg Gly Lys Cys Val
690 695 700
Arg Thr Gly Cys Asp Gly Ile Ile Gly Ser Lys Leu Gln Tyr Asp Lys
705 710 715 720

Cys Gly Val Cys Gly Gly Asp Asn Ser Ser Cys Thr Lys Ile Val Gly
725 730 735

Thr Phe Asn Lys Lys Ser Lys Gly Tyr Thr Asp Val Val Arg Ile Pro
740 745 750

Glu Gly Ala Thr His Ile Lys Val Arg Gln Phe Lys Ala Lys Asp Gln
755 760 765

Thr Arg Phe Thr Ala Tyr Leu Ala Leu Lys Lys Asn Gly Glu Tyr
770 775 780

Leu Ile Asn Gly Lys Tyr Met Ile Ser Thr Ser Glu Thr Ile Ile Asp
785 790 795 800

Ile Asn Gly Thr Val Met Asn Tyr Ser Gly Trp Ser His Arg Asp Asp
805 810 815

Phe Leu His Gly Met Gly Tyr Ser Ala Thr Lys Glu Ile Leu Ile Val
820 825 830

Gln Ile Leu Ala Thr Asp Pro Thr Lys Pro Leu Asp Val Arg Tyr Ser
835 840 845

Phe Phe Val Pro Lys Lys Ser Thr Pro Lys Val Asn Ser Val Thr Ser
850 855 860

His Gly Ser Asn Lys Val Gly Ser His Thr Ser Gln Pro Gln Trp Val
865 870 875 880

Thr Gly Pro Trp Leu Ala Cys Ser Arg Thr Cys Asp Thr Gly Trp His
885 890 895

Thr Arg Thr Val Gln Cys Gln Asp Gly Asn Arg Lys Leu Ala Lys Gly
900 905 910

Cys Pro Leu Ser Gln Arg Pro Ser Ala Phe Lys Gln Cys Leu Leu Lys
915 920 925

Lys Cys
930

<210> 16

<211> 42

<212> PRT

<213> Homo sapiens

<400> 16

Ser Ile Ser Arg Ala Arg Gln Val Glu Leu Leu Leu Val Ala Asp Ala
1 5 10 15

Ser Met Ala Arg Met Tyr Gly Arg Gly Leu Gln His Tyr Leu Leu Thr
20 25 30

Leu Ala Ser Ile Ala Asn Lys Leu Tyr Phe
35 40

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<211> 23

<212> DNA

<213> Mus musculus

<400> 17
cgggccacgac cctcaagaac ttt

23

<210> 18

<211> 25

<212> DNA

<213> *Mus musculus*

<400> 18

gcatggaggc catcatcttc aatca

25

<210> 19

<211> 22

<212> DNA

<213> *Homo sapiens*

<400> 19

gggaggattt atgtgggcat ca

22

<210> 20

<211> 23

<212> DNA

<213> *Homo sapiens*

<400> 20

gtgcatttgg accagggctt aga

23

<210> 21

<211> 13

<212> PRT

<213> Artificial Sequence

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<223> Acp

<220>

<221> MOD_RES

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Ser Ile Ser Arg Ala Arg Gln Val Glu Leu Leu Xaa Cys
1 5 10

<210> 22

<211> 14

<212> PRT

<213> homo sapiens

<400> 22

Asn Ile Thr Glu Gly Glu Ala Arg Gly Ser Val Ile Leu Thr
1 5 10

<210> 23

<211> 14

<212> PRT

<213> bovine

<400> 23

Asn Ile Thr Glu Gly Glu Ala Arg Gly Ser Val Ile Leu Thr
1 5 10

<210> 24

<211> 14

<212> PRT

<213> rat

<400> 24

Asn Ile Thr Glu Gly Glu Ala Arg Gly Asn Val Ile Leu Thr
1 5 10

<210> 25

<211> 14

<212> PRT

<213> mouse

<400> 25

Asn Val Thr Glu Gly Glu Ala Leu Gly Ser Val Ile Leu Thr
1 5 10

<210> 26

<211> 14

<212> PRT

<213> pig

<400> 26

Asn Ile Thr Glu Gly Glu Ala Arg Gly Thr Val Ile Leu Thr
1 5 10

<210> 27

<211> 14

<212> PRT

<213> sheep

<400> 27

Asn Ile Thr Glu Gly Glu Ala Arg Gly Asn Val Ile Leu Thr
1 5 10

<210> 28

<211> 11

<212> PRT

<213> chicken

<400> 28

Asn Val Thr Glu Glu Ala Arg Gly Ser Ile
1 5 10

<210> 29

<211> 14

<212> PRT

<213> horse

<400> 29

Asn Ile Thr Glu Gly Glu Ala Arg Gly Asn Val Ile Leu Thr
1 5 10

<210> 30

<211> 16

<212> PRT

<213> homo sapiens

<400> 30

Ala Ser Thr Ala Ser Glu Leu Glu Gly Arg Gly Thr Ile Gly Ile Ser
1 5 10 15

<210> 31

<211> 16

<212> PRT

<213> bovine

<400> 31

Ala Thr Thr Ala Gly Glu Leu Glu Gly Arg Gly Thr Ile Asp Ile Ser
1 5 10 15

<210> 32

<211> 16

<212> PRT

<213> mouse

<400> 32

Ala Thr Thr Ser Ser Glu Leu Glu Gly Arg Gly Thr Ile Gly Ile Ser
1 5 10 15

<210> 33

<211> 16

<212> PRT

<213> rat

<400> 33

Ala Thr Thr Ala Ser Glu Leu Glu Gly Arg Gly Thr Ile Ser Val Ser
1 5 10 15

<210> 34

<211> 16

<212> PRT

<213> homo sapiens

<400> 34

Pro Thr Thr Phe Lys Glu Glu Glu Gly Leu Gly Ser Val Glu Leu Ser
1 5 10 15

<210> 35

<211> 16

<212> PRT

<213> bovine

<400> 35

Pro Thr Thr Phe Lys Glu Glu Glu Gly Leu Gly Ser Val Glu Leu Ser
1 5 10 15

<210> 36

<211> 16

<212> PRT

<213> rat

<400> 36

Pro Thr Thr Phe Arg Glu Glu Glu Gly Leu Gly Ser Val Glu Leu Ser
1 5 10 15

<210> 37

<211> 16

<212> PRT

<213> mouse

<400> 37

Pro Thr Thr Phe Arg Glu Glu Glu Gly Leu Gly Ser Val Glu Leu Ser
1 5 10 15

<210> 38

<211> 16

<212> PRT

<213> homo sapiens

<400> 38

Thr Gln Ala Pro Thr Ala Gln Glu Ala Gly Glu Gly Pro Ser Gly Ile
1 5 10 15

<210> 39

<211> 16

<212> PRT

<213> bovine

<400> 39

Thr Gln Ala Pro Thr Ala Gln Glu Ala Gly Glu Gly Pro Ser Gly Ile
1 5 10 15

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<211> 16

<212> PRT

<213> rat

<400> 40

Thr Leu Ala Pro Thr Ala Gln Glu Ala Gly Glu Gly Pro Ser Ser Ile
1 5 10 15

<210> 41

<211> 16

<212> PRT

<213> mouse

<400> 41

Thr Gln Ala Pro Thr Ala Gln Glu Ala Gly Glu Gly Pro Ser Gly Ile
1 5 10 15

<210> 42

<211> 16

<212> PRT

<213> chicken

<400> 42

Thr Gln Thr Ser Val Ala Gln Glu Val Gly Glu Gly Pro Ser Gly Met
1 5 10 15

<210> 43

<211> 17

<212> PRT

<213> homo sapiens

<400> 43

Thr Glu Pro Thr Ile Ser Gln Glu Leu Leu Gly Gln Arg Pro Pro Val
1 5 10 15

Thr

<210> 44

<211> 16

<212> PRT

<213> bovine

<400> 44

Thr Glu Pro Thr Val Ser Gln Glu Leu Gly Gln Arg Pro Pro Val Thr
1 5 10 15

<210> 45

<211> 16

<212> PRT

<213> rat

<400> 45

Thr Glu Pro Thr Val Ser Gln Glu Leu Gly His Gly Pro Ser Met Thr
1 5 10 15

<210> 46

<211> 16

<212> PRT

<213> mouse

<400> 46

Thr Glu Pro Thr Val Ser Gln Glu Leu Gly His Gly Pro Ser Met Thr
1 5 10 15

<210> 47

<211> 16

<212> PRT

<213> chicken

<400> 47

Thr Arg Pro Thr Val Ser Gln Glu Leu Gly Gly Glu Thr Ala Val Thr
1 5 10 15

<210> 48

<211> 16

<212> PRT

<213> dog

<400> 48

Thr Glu Pro Thr Val Ser Gln Glu Leu Ala Gln Arg Pro Pro Val Thr
1 5 10 15

<210> 49
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<212> PRT
<213> Human

<400> 49

Ile Thr Glu Gly Glu
1 5

<210> 50
<211> 4
<212> PRT
<213> Human

<400> 50

Ala Arg Gly Ser
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<210> 51
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<212> PRT
<213> Human

<400> 51

Ser Glu Leu Glu
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<210> 52
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<400> 52

Gly Arg Gly Thr
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<210> 53
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<400> 53

Lys Glu Glu Glu
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<210> 54
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<400> 54

Gly Leu Gly Ser
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<210> 55
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<400> 55

Thr Ala Gln Glu
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<210> 56
<211> 4
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<400> 56

Ala Gly Glu Gly
1

<210> 57
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<400> 57

Ile Ser Gln Glu
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<210> 58
<211> 4
<212> PRT
<213> Human

<400> 58

Leu Gly Gln Arg
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<210> 59
<211> 7
<212> PRT
<213> Bovine

<400> 59

Ala Arg Gly Ser Val Ile Leu
1 5

<210> 60
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Synthesized

<400> 60

Cys Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val Ala Asp Asp
1 5 10 15

Lys